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DEPARTMENT OF AGRICULTURE AND FISHERIES

ANNUAL REPORT

FOR THE YEAR

1942-1943

(YEAR ENDED MARCH 31. 1943)



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DEPARTMENT OF AGRICULTURE AND FISHERIES

For the

YEAR ENDED MARCH 31, 1943.

GENERAL SURVEY.

Citrus apart, the main feature of agriculture in Palestine was that ever higher prices were realised for all products. A variety of explanations have been suggested for this, including the general rise in the cost of living, higher wage rates, and production costs generally, and also, it must be added, profit making on an entirely new scale. In these circumstances it became apparent to Government that the granting of loans for increased production was a policy which no longer had the same urgency as during the opening years of the war.

SECTION I.

AGRICULTURE AND FISHERIES IN PALESTINE, 1942-43.

MAJOR CROPS AND INDUSTRIES.

The Citrus Industry.

Area under Citrus.

2. No permission was granted for the planting of new citrus areas. The total area early in 1943 was some 276,500 dunums made up of 240,000 dunums of oranges, 19,000 of grapefruit, 7,500 of lemons, and 10,000 of other citrus varieties. About 8,000 dunums of the total area were, however, either neglected or abandoned.

Citrus Cultivation.

3. In general, more attention was given to soil cultivation than in the previous year, but the continued lack of fertilizers, especially nitrogenous, became increasingly evident in the condition of the trees. Transport shortage tended to limit the use of animal manure, and many groves suffered also from economies in irrigation and shortage of labour. Loans totalling £P.636,975 were issued in respect of 177,284 dunums. The rate of Rural Property Tax on citrus was again scheduled as nil.

The Citrus Crop.

4. Bloom was fairly heavy but the set was only average. The crop was estimated at a total of only some 5 million cases, or about one half of the preceding year.

Export and Disposal of the Citrus Crop.

5. The following tabular statement summarises the exports during the 1942-43 season (1.6.42—31.5.43):—

Citrus Fruits							Export Cases	Value £P. F.O.B.
Oranges (*)	...	...	...	...	...	...	383,894	249,871
Grapefruit	...	...	...	...	...	...	7,300	4,234
Lemons and other citrus	...	...	...	...	...	...	—	—
Total exports in cases	...	...	...	...	...	...	391,194	254,105
Exports in bulk (27,131 tons) (*) (**) equivalent to	...	...	...	...	...	...	678,275	136,006
TOTAL							1,069,469	390,111

(*) Includes 27,492 cases and 27 tons in bulk of Valencia oranges of 1941-42 crop exported in June and July, 1942.

(**) Exports in bulk:—Syria and Lebanon, 19,623 tons; Iraq 3,970 tons (unwrapped in miscellaneous containers); Egypt 3,530 tons; Aden, 8 tons; total 27,131 tons.

6. Local consumption of fruit was estimated at about 2½ million cases. In addition the Army authorities placed contracts for the equivalent of some 235,000 cases, while the use of fruit for citrus products amounted to some 1½ million cases. Prices were fairly good early in the season but mid-season sales were less remunerative. It is doubtful whether many growers realised much more than an average of £P.2 per ton on the tree.

One Palestine Pound (£P.) = 1,000 mils = One Pound Sterling.

One Dunum (metric) = 1,000 square metres = 0.2471 acre.

Throughout this report the term "Ton" means the metric ton of 1,000 kilogrammes.

Citrus Marketing Control.

7. Fees collected under the marketing control scheme in the 1941-42 season totalled some £P.122,000 of which about £P.107,000 was paid out to growers after the end of the season at the rate of 400 mils per dunum of bearing grove. It was not considered necessary to continue the scheme into the 1942-43 season, and it was therefore discontinued as from the 28th November, 1942.

Citrus Products.

8. There was a further increase in citrus products. The seasonal concentrate production capacity of the factories was about 2,000 tons of 7 to 1 concentrate and production totalled some 1,000 tons. The production of citrus essential oils was estimated at 53,000 lbs. of orange oil, 15,000 lbs. of lemon, and 5,000 lbs. (or less) of grapefruit oil. Increased costs of local production militated against exports of oil to the United Kingdom. The manufacture of juice, squashes, marmalade, and other products was continued.

Citrus Control Board.

9. The Board held nine meetings during the year under review. In February 1943 the Board published a report of its work since its establishment until July 1942. This report also included a summary of the activities of the Citrus Marketing Board up to the same date and the statistics compiled from the citrus grove registration undertaken by the Control Board. As in 1941-42 the staff of the Board carried out most of the work of dealing with citrus loan applications as well as the office work of the Citrus Marketing Board. The Chief Horticultural Officer continued to act as Manager of the Board.

Citrus Marketing Board.

10. After the termination of the marketing scheme the Board was concerned with Army contracts, control and release of packing materials, and export licensing.

Wheat.

1941-42 Season.

11. An exceptionally cold winter was followed by a spell of intense heat in early May which induced premature ripening of much of the crop. Attacks by Ed-Duda (*Syringopais temperatella*) were widespread and caused considerable damage. In spite of these adverse factors an average crop was reaped, and the quality of the grain was good.

1942-43 Season.

12. Heavy and prolonged rains during the growing season resulted in severe attacks of rust particularly in the extreme south and along the coast. Weed infestation was heavy, and the lateness of the season, shortage of machinery, and scarcity and high cost of labour delayed harvest by some weeks. As a consequence, yields in many areas were indifferent and the quality of the grain was seriously affected by rust.

Barley.

1941-42 Season.

13. The crop was satisfactory, particularly in the south; Beersheba was recorded as having the best barley crop for twenty years.

1942-43 Season.

14. The late season and prolonged rains affected this crop through less seriously than the wheat. Yields were moderately good.

Pulse Crops.

15. Some increase in planted areas may probably be ascribed to the absence of control of the price of pulses. Peas and field beans responded to the wet season by yielding abundantly. Lentils, however, were very severely attacked by rust. Seed of vetches was in short supply, and rain encouraged vegetative growth at the expense of seed.

Vegetables.

16. The increase in the area planted to vegetables barely kept pace with high market demands. Shortage of fertilizers had an adverse effect. The excessive rains caused loss of many seedlings and necessitated wide replanting. The timely provision by Government of large quantities of vegetable seedlings at low prices undoubtedly prevented the prices of young plants becoming excessive. While the cream of the high prices was skimmed, as usual, by dealers, vegetable producers enjoyed exceptional returns.

Summer Crops.

17. In some parts of the country the late wet season caused delay in the preparation of the land for summer crops, with a consequent reduction of areas. On the other hand, the exceptional

moisture stored in the soil—to which the increasing adoption of deep-ploughing contributed, gave promise of good summer crops of dura and sesame except in areas where excessive moisture caused poor germination.

Forage Crops.

18. Forage crops in general did well, though in many cases quality declined somewhat owing to excessive growth of weeds. "Berseem Fahli" gave excellent yields, and sowings of this legume on a more extensive scale are anticipated.

Potatoes.

19. Shortage and poor quality of seed resulted in only moderate winter crops in many areas. An importation of seed by Government gave good results on an increased area in 1943. Cold storage played an important part in the disposal of the crop.

Groundnuts.

20. A further increase in planted area is noted, but expansion remains limited by the difficulty of extending irrigation under war-time conditions, and by the shortage and high cost of labour.

Fruits Other than Citrus.

21. It is estimated that about 700 dunums were planted with nursery grown trees and that a few hundred dunums were planted with stocks or sown with seeds for budding *in situ*.

Deciduous Fruits.

22. Weather conditions were in general very favourable to tree growth and the fruit set was good. Losses on account of insect pests were rather severe. The plum crop was variable, with high prices averaging £P.50—£P.60 per ton. It is estimated that 5,000 tons of apricots, 700 tons of plums, 3,500 tons of apples and 120 tons of pears were produced in the 1942 season. The price of pome fruits ranged from £P.60—£P.90 per ton.

Olives

23. The 1942 crop was above normal; the fruit was generally free from pests and olive fly infestation was below average. Over 10,000 tons of oil was produced, and the price of edible oil ranged from £P.180 to £P.200 per ton. Dates of picking and pressing were controlled under the Food Control Ordinance, and 13 additional temporary inspectors were employed by the Department of Health to supplement the regular staff in the inspection of presses during the season. Notable progress in the production of a better edible oil was observed in many areas as a result of these measures.

Bananas.

24. The yield was estimated as slightly below the 1941 crop of 6,500 tons, plants in the coastal plain having suffered frost damage during the winter of 1941-42. Prices ranged from £P.60—£P.90 per ton of green fruit. The area under bananas increased by about 500 dunums, mainly around Tiberias, bringing the total areas to some 7,000 dunums.

Grapes.

25. The crop was generally good, with only slight loss from unfavourable weather, diseases, and pests. Prices were remunerative ranging from £P.15 to £P.20 per ton. Some 6,000 tons of grapes were used by the wine cellars; there was a good demand for local wines, owing in part to requirements of the Allied Armies.

Sub-Tropical Fruits.

26. The fig crop was good, and sold at from 30 mils to 60 mils a kilo fresh, and about 100 mils per kilo dried. As regards fruits of relatively minor importance, good crops of mangoes, guavas and pomegranates were set and sold at high prices; annonas, dates and avocados, however, only set a medium crop.

Poultry and Beekeeping.

27. A considerable increase in the poultry population was attributable in part to the distribution of chicks from Government hatcheries in the previous year. During the season February—August 1942 the hatcheries produced 280,000 chicks which were sold to Arab farmers at 15 mils per chick. The average hatchability of all eggs incubated was 42.6 per cent.; mortality among chicks was normal. The capacity of the two hatcheries was increased at the end of 1942 from 100,000 to 250,000 eggs.

28. About 200 tons of damaged sugar were distributed to bee-keepers, and about 300 kilogrammes of Cyano gas powder were supplied gratis for hornet control. The honey crop was normal at about 500 tons.

SECTION II.

WORK OF THE DEPARTMENT OF AGRICULTURE AND FISHERIES AND OF THE GENERAL AGRICULTURAL COUNCIL.

Establishment of Department at Close of Year.

Director	: MAJOR F. R. MASON.
Deputy Director and Controller of Agricultural Production	: MR. D. STEDMAN DAVIES.
Chief Agricultural Officer	: MR. G. G. MASSON (On leave prior to retirement).
Chief Horticultural Officer	: MR. A. C. SHILL.
Chief Plant Protection Officer	: DR. J. E. HARDY.
Chief Fisheries Officer	: DR. G. C. L. BERTRAM.

Agricultural Service.

29. War-time duties again included estimations of crops under the Government control scheme, valuations made necessary by Army requisitions, and inspections and recommendations for the release of controlled materials. In addition, the Deputy Director was appointed Controller of Agricultural Production with ample funds to facilitate the maximum production of food by all possible means.

30. The activities of the Controller were severely curtailed by the absence of tractors and scarcity of irrigation equipment, fertilizers and seeds but, nevertheless, good progress was made in expanding the production of vegetables, in the production of vegetable seeds and in the multiplication of selected strains of cereals produced on the Government Farm at Acre. Vegetable seedling nurseries were established at convenient centres to provide an abundant supply of seedlings for distribution, at nominal prices to farmers and gardeners and free to schools, institutions, police stations, prisons and army camps. An extensive irrigation system was installed on the Farm at Acre for the production of vegetable seeds and additional lands within the radius of the existing machinery of the Farm were taken over for the multiplication of selected strains of cereals. Millions of seedlings were distributed and tons of vegetable seeds were produced which reduced prices by over 50 per cent.

31. Varietal testing of wheat, barley and oats was continued at Acre as well as hybridisation of the most promising strains. Two very promising barley strains—B.M.C. and F.I. were released to farmers for the first time. Acknowledgment is again due to the Jewish Agency's Agricultural Research Station, Rehovot, and many Jewish farmers for their co-operation in field tests.

32. In September 1942, the Northern Circle was divided into two Agricultural Districts, with headquarters at Nazareth and Haifa, following the appointment of an additional Agricultural Officer.

Horticultural Service.

33. Normal work was carried out at all Horticultural Stations; new plots were planted out for trial or demonstration purposes, and plantings were extended. Nursery production totalled some 40,000 fruit trees and 20,000 grafted vines. With additional production of fruit trees, 22,250 were sold, 10,500 were distributed free or planted at stations; 12,300 grafted vines were sold, and 5,450 distributed free or planted. In addition, 6,800 stocks were distributed. Horticultural Instructors continued to devote much of their time to improvement of olive oil production.

Fruit Inspection Service.

Grove Inspections for Loans.

34. The system of points judging introduced in 1941 was adhered to for the 1942-43 loans, with subsequent re-judging, on appeal, by senior officers. In February 1943 a re-judging of all groves was commenced, the cancellation of the citrus marketing scheme having released the officers needed for this work.

General Citrus Survey.

35. Whenever possible, work was resumed on the general citrus survey. 6,924 dunums located in 5 village areas were surveyed for the first time, and the earlier survey was revised in respect of 28,353 dunums in 12 village areas.

Inspection of Fruit: Citrus Wastage Investigation.

36. Consignments of fruit were inspected as required. The Citrus Control Board arranged to finance the continuation of the research work on citrus fruit wastage in 1942-43 at a cost of £P.1,886 (£P.1,985 in 1941-42). A review of the work carried out in the 1941-42 research year was prepared by the Jewish Agency Agricultural Research Station, Rehovot, in collaboration with the Chief Horticultural Officer who continued his duties as Acting Manager of the Board.

Plant Protection Service.

Identification.

37. No consignments of insects were sent to the Imperial Institute of Entomology for identification.

38. Twelve consignments of diseased plant material were sent to and identified by the Chief Plant Pathologist of the Jewish Agency Agricultural Research Station at Rehovot.

Research and Investigations.

39. (a) *Pseudococcus comstocki*. In general the situation remained as in 1941, with no considerable increase in the activity of the insects. Biological studies of the mealybug continued and it was shown that the life cycle could not be completed at a temperature below 12.2°C. So far it has been possible only in one case to establish the association of ants with the mealybug; a new plant *Aralia seiboldii* was added to the list of its hosts. Mass breeding of the chalcid parasite *Clausenia purpurea*, Ishii, produced some 85,000 chalcids which were distributed to citrus growers free of charge.

(b) Deciduous fruit trees.

(i) *Capnodis* sp. Experiments were continued with layers of sand.

(ii) *Carpocapsa pomonella* L. Biological data were collected in the field, and trials with winter washes and sprays were made.

(iii) *Ceratitis capitata*, Wied. Spraying experiments were continued with lead arsenate, tartrates and copper carbonate.

(iv) *Parlatoria oleae*, Colv. A third repetition of the experiment consisting of two sprays, viz. one pre-winter and one spring spray with medium heavy oils of 5 per cent. concentration proved an efficient method of control of this scale on apple trees.

(v) *Virachola livia*, Klug. Experiments carried out with sodium-barium fluosilicate and lead arsenate against this Lycanid butterfly, attacking pomegranates, were not very satisfactory. Further experiments are in progress.

Cereals.

40. *Syringopais temperatella*. Investigations were continued in the biology of this moth whose larvae mine in the blades of wheat.

Miscellaneous.

41. Spraying experiments with various oils were carried out against Black Scale, *Chrysomphalus aonidum*, Ashm. in citrus groves of the coastal plain. A consignment of *Clausenia purpurea* was despatched to Tashkent, U.S.S.R., at the request of their Central Laboratory of Plant Quarantine. At the beginning of the winter there was an unusual outbreak of Noctuid larvae, causing some damage to fodder, cereal and vegetable crops. Spraying experiments were conducted against the mealybug *Pseudococcus citri*, Risso., on vines, and against Psyllids on pears. Comparative dustings against codling moth indicated the greatest efficiency of barium fluosilicate.

Locust Unit in Arabia.

42. In connection with a scheme set up by His Majesty's Government in England, which has as its aim to co-ordinate methods of control of locusts in countries of East Africa and the Middle East in order to avoid possible food losses, which might be occasioned by threatened locust invasions, a locust unit headed by the Chief Plant Protection Officer was sent to the North-West of Arabia, to find out whether this area constitutes a breeding ground for the desert locust *Schistocerca gregaria*, Forsk. and to institute a campaign in case breeding takes place. After a four months' stay and thorough exploration of the country it could be established that the territory in question is not suitable for locust breeding and so far does not constitute a springboard for invasions to Trans-Jordan and Palestine, as anticipated.

PLANT PATHOLOGY.

43. Experiments were continued against soil-inhabiting fungi causing "damping-off" of tobacco seedlings. Lubia seeds (*Vigna sinensis*), resistant to the rust *Uromyces vignae*, were obtained from the Egyptian Ministry of Agriculture for trial in Palestine.

Extension—Plant Quarantine.

44. Normal extension work was continued. A total of 1,591 incoming consignments of plants was examined; one was confiscated and 79 fumigated. 757 consignments for export were inspected of which 544 were fumigated. 89 nursery licences were issued and 10 new nurseries were registered.

Fisheries.

45. The total catch of fish from sea and inland waters was 2,530 tons, an increase of some 40 per cent. over the previous year. The five species which showed the most notable increase as regards catches were—sea water and fresh water "sardines", Sultan Ibrahim, carp, and musqar. These five together account for three-quarters of the total catch. No foreign-caught fish was landed, and the ban on "lampara" fishing (by lights) was still in force throughout the year. Musht and kersin from Lake Tiberias showed an expected decrease as a result of the enforcement of more stringent legal minimal sizes.

Aqaba Fishery.

46. The Aqaba Fishery Scheme was approved as a special wartime measure to increase food supplies. The largest vessel so far built in Palestine, a wooden schooner of 85 feet length, was acquired by Government as soon as the hull was complete. She has since been fitted out with refrigerating machinery to act as collecting vessel and mother ship in the fishery and actual fishing began in the Gulf in September 1943.

Trawling.

47. The catch by trawling rose from 13 per cent. to 19 per cent. of the marine total. The total number of trawlers by the end of the year was about a dozen but there is some doubt whether the construction of further small trawlers is in the best interests of the country from the short-term war-time point of view. Catches are so small that it is by no means certain that the use of materials in short supply for constructing trawlers is justified.

Fish Ponds.

48. The number of fish ponds has again increased, particularly in the Beisan sub-district, and the total area has now risen from 1,210 to over 2,000 dunums. Production from ponds is increasing rapidly and owing to high prices obtainable, rearing carp is an extremely paying proposition.

Lake Tiberias.

49. After the completion in the spring of 1942 of sixteen months of field work, a detailed report was submitted to Government. This report contains all the data on which the new policy and regulations now in force in the Lake are based. A much more detailed regulation of the Lake Tiberias Fishery came into force on 1st April, 1942, and has led to the proper enforcement of the rules covering legal minimal sizes of mesh of nets and length of fish, and the bringing of all fish from the Lake to the Fisheries Service Statistical Control Post.

Mallaha Experiment Station.

50. The development of this station has continued, but the work has been hampered by unavoidable delay in expropriating the property and by the high cost of materials and labour.

Research.

51. There was a full programme of research work at Lake Tiberias, the Mediterranean coast, the Gulf of Aqaba, and the Mallaha Experiment Station.

Kadoorie Agricultural Schools.

52. A normal year was completed by each of the Kadoorie Agricultural Schools with a full complement of students in residence at the close of the period. At Mount Tabor certain improved arrangements were made for the fullest possible participation of students in all seasonal work and in all the different branches, with a view to developing a sense of responsibility.

53. In the field crop section, results expressed in nutritive units were 44 per cent. higher than in the previous year, although the area was only 10 per cent. larger. The vegetable garden was enlarged in accordance with present day needs. Progress was satisfactorily maintained in all sections, including livestock.

54. In October, 1942, the Kadoorie Agricultural School, Tulkarm, completed its first year since the re-opening; 26 new students were admitted, bringing the total in residence to 46. All the first year students passed the examination qualifying them to proceed to a second year of studies; 20 students graduated and obtained Diplomas. Farm activities were normal, and included soil conservation work which had become necessary as the result of heavy cloud bursts during the previous season.

General Agricultural Council.

55. Three meetings were held by the Council during the year under review. The Council considered certain war-time legislation under which the Food Controller assumed powers over the disposal of grain crops. Draft legislation relating to war damage was also studied. A sub-committee of the Council presented a report upon the olive oil industry together with a draft Ordinance analogous to that under which the Citrus Control Board was established. The report and draft legislation were submitted to Government.

Legislation.

56. The only legislation to be reported was the revocation of a rule under the Fisheries Ordinance prohibiting trawlers of more than 40 feet in length from fishing within the territorial waters.

F. R. MASON

Director of Agriculture and Fisheries.

Jerusalem,
March 8th, 1944.